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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,739	01/17/2002	Hiroaki Furuichi	16869N-040800US	3275

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EXAMINER

KIANNI, KAVEH C

ART UNIT PAPER NUMBER

2877

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,739

Applicant(s)

FURUICHI ET AL.

Examiner

Kevin C Kianni

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 1-2, 8-911-12 and 20-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 3-4, 7 and 14-18 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 10, 13 and 19 is/are objected to.
- 8) ☒ Claim(s) 1-25 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention:
 - I. Group I invention (claims 1, 8 and 11) is directed to a filter being shaped in a cylinder provided with a plane of incidence and a plane of emission substantially in parallel to each other, wherein a slope of said plane of incidence has an angle other than 0.degree. with regard to a central axis of said cylinder.
 - II. Group II invention (claims 2, 9 and 12) is directed to the rotational axis of a filter is disposed by an angle with regard to an optical axis center of the beam transmitted through a lens, and the rotational axis of said filter is pivoted so as to fix said filter in a position where an incident angle of said beam with regard to the filter is adjusted.
 - III. Group III invention (claims 3-7, 10 and 13-19) is directed to a filter being provided with a plane of incidence and a plane of emission substantially in parallel to each other and at least one lateral plane between said planes of incidence and emission, wherein said filter is fixed on the substrate such that said lateral plane and substrate have an angle of 0.degree. or more therebetween.
 - IV. Group IV invention (claims 20-21) is directed to a lens being provided with a rotational axis parallel with regard to an optical axis thereof and a plane

of emission of said lens is inclined from a vertical plane with regard to said rotational axis.

- V. Group V invention (claims 22-23) is directed to a wedge substrate to convert a direction of the beam as converted, wherein a plane of emission of said wedge substrate is inclined from a vertical plane with regard to a rotational axis thereof and said wedge substrate is arranged pivotable centering on an optical axis of the beam at a plane of incidence thereof.
- VI. Group VI invention (claims 24-25) are directed to a filter being provided with a surface inclined with regard to a central axis of a cylinder, along an outer circumference of which cylinder a metallic part capable of being fused by laser spot welding is provided.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, none of the claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims

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are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Mr. Robert Colwell on September 2, 2003 a provisional election was made with traverse to prosecute the invention of Group III (claims 3-7, 10 and 13-19). Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-2, 8-9, 11-12 and 20-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

2. Claims 16-19 are objected to because of the following informalities: The phrase "side-slope", stated in the independent claim 16, page 37, line 14, does not have an antecedent basis in the specification and, thus, is indefinite in claim 16.
Appropriate correction is required.

Drawings

3. Figure 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

4. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

5. The disclosure is objected to because of the following informalities: the word/phrase "e'y" mentioned specification, in at least line 10 of page 5, is either misspelled or is not shown in drawing/fig. 6. Appropriate correction is required.

Allowable Subject Matter

6. Claims 5-6, 10, 13 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 5-6 are allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein said retaining member and filter are soldered together in combination with the rest of the limitations of the base claim.

Claim 13 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein a marking is provided on the filter for position setting in combination with the rest of the limitations of the base claim.

Claim 19 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein a center of the lens is offset vertically against the center of the optical axis of the beam emitted from the semiconductor laser in combination with the rest of the limitations of the base claim

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-4, 7 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirai et al. (US 6532059).

Regarding claim 3, Shirai teaches an optical module (shown in at least fig. 3), comprising a substrate 38, a semiconductor laser (see parag. 10), a lens 33 to convert a beam emitted from said semiconductor laser (parag. 9), a wavelength selective filter 34/35 of the beam as converted and a light receiving device 31 to receive the beam transmitted through the filter 34/35, wherein said filter 34/35 is provided with a plane of incidence and a plane of emission substantially in parallel to each other (shown in fig. 3, items parallel incident and emission beams) and wherein said filter is fixed on the substrate 38 such that said lateral plane and substrate have an angle of 0.degree. or more therebetween (see fig. 3, items incident/emission paralleled planes entering and exiting filter 34/35, wherein the lateral plane is the angle between the substrate and the filter 31, see parag. 93).

However, Shirai does not specifically teach wherein the above optical module is an optical communication module and at least one lateral plane between said planes

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of incidence and emission. Nevertheless, shirai teaches planes of incidence and emission being paralleled (see fig. 3, items incident/emission paralleled planes entering and exiting filter 34/35) and that the filter 34 is fixed with an angle with respect to substrate 38. It would have been obvious to a person of ordinary skill in the art when the invention was made to use the above optical module for optical communication since such as optical systems are compatible with regard to optical transmission and receiving mechanisms shown in fig 1 in order to select particular wavelength of transmission light (see col. 4, line 39) and it is also well known to those of ordinary skill in the art when the invention was made that the lateral angle created between the substrate and filter is known to be between the incidence and emission planes since such configuration stabilizes light wavelengths with respect to temperature (see col. 2, lines 52-64).

With respect to claims 4 and 7 Shirai further teaches wherein a retaining member 61 to maintain an angle between said lateral plane and substrate is provided between said filter and substrate 38 (see fig. 1, and 4, items 34 and 61; wherein it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70); wherein a plurality of lateral planes is provided with the filter (see fig. 2 and 3 items angular displacement of filters with respect to substrate 38 creating lateral planes, see col. 10, lines 18-28).

With regard to claim 14, Shirai teaches a method for manufacturing an optical module (shown in figures 2 and 3, 1) comprising. semiconductor laser, a lens 33 to convert a beam emitted from said semiconductor laser, a wavelength selective filter 34/35 of the beam as converted (shown in fig. 2/3, items laser beam and 33), a plane of incidence and a plane of emission of which filter are substantially in parallel to each other and a light receiving device 31 to receive the beam transmitted through the filter (see fig. 2/3, items parallel emission/incident beams), said method comprising the steps of disposing the filter 34/35 such that a tilting axis of said filter has an angle with regard to an optical axis of the beam emitted from the lens 33; pivoting said rotating axis so as to adjust an incident angle of the beam with regard to the filter; and fixing the filter at a position where said incident angle is adjusted (see fig. 2/3, items incident/emission paralleled planes entering and exiting filter 34/35, see parag. 9).

With respect to limitation communication, the arguments presented in rejection of claim 3 is analogous in rejection of claim 14.

With regard to claim 15, Shirai further teaches wherein a side-slope of a plane of incidence of the filter is inclined with regard to said rotation axis (see fig. 3, item rotational and incident axis/planes).

With regard to claim 16, Shirai teaches a method for manufacturing an optical module (shown in figures 2 and 3, see abstract) comprising. semiconductor laser, a lens 33 to convert a beam emitted from said semiconductor laser, a wavelength

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selective filter 34/35 of the beam as converted (shown in fig. 2/3, items laser beam and 33), a plane of incidence and a plane of emission of which filter are substantially in parallel to each other and a light receiving device 31 to receive the beam transmitted through the filter (see fig. 2/3, items parallel emission/incident beams), said method comprising the steps of disposing the filter 31 by inclining the side-slope of the plane of incidence by an angle with regard to the optical axis of the beam, rotating said filter around an axis different from the side-slope of said plane of incidence so as to adjust an incident angle of the beam with regard to said filter, and fixing said filter at a position where said incident angle is adjusted (see fig. 3, item filter34/35 being fixed at an angular position after being adjusted by item 61/62 in fig. 4 for adjusting incident light see abstract, also col. 2nd parag., and col. 6, last parag.-col. 7, 1st parag.). With regard to Shirai's teachings of the limitation optical communication the arguments presented in rejection of claim 3 is analogous in rejection of claim 16.

Regarding claims 17 and 18, Shirai further teaches wherein at the step of adjusting the incident angle of the beam with regard to the filter, said filter is rotated around a center of the optical axis of the beam emitted from the semiconductor laser or a line parallel with regard to said optical axis (see fig. 3, item 33/34 and col. 5, line 58-col. 6, line 24).

9. Claims 3-4, 7 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoyama (US 2001/0022793 A1 with a publication priority date of 9/21/2001 of JP02001257419A).

With regard to claim 3, Yokoyama teaches an optical communication module (shown at least in fig. 1) comprising a substrate 7 (see fig. 1, item 7), semiconductor laser, a lens 2 to convert a beam emitted from said semiconductor laser, a wavelength selective filter 31 of the beam as converted (shown in fig. 1, item 31 and abstract), and a light receiving device 6 to receive a beam transmitted through the filter 31, wherein said filter is provided with a plane of incidence and a plane of emission of which filter are substantially in parallel to each other (shown in fig. 3, items parallel incident and emission beams) and wherein said filter is fixed on the substrate 38 such that said lateral plane and substrate have an angle of 0.degree. or more therebetween (see fig. 1, items incident/emission paralleled planes entering and exiting filter 31, see parag. 93-94).

However, Yokoyama does not specifically teach wherein at least one lateral plane between said planes of incidence and emission. Nevertheless, shirai teaches planes of incidence and emission being paralleled (see fig. 1, items incident/emission paralleled planes entering and exiting filter 31) and that the filter 31 is fixed with an angle with respect to substrate 38 (see parag. 93). Thus it is also well known to those of ordinary skill in the art when the invention was made that the lateral angle created between the substrate and filter is known to be between the incidence and emission

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planes since such configuration being small in size and stabilizes light wavelengths with high accuracy (see parag. 2).

With respect to claims 4 and 7 Yokoyama further teaches wherein a retaining member 112 to maintain an angle between said lateral plane and substrate is provided between said filter and substrate 38 (see fig. 1 and 19, item filter 31/103 and angle adjuster 112, see parag. 7-8; wherein it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70); wherein a plurality of lateral planes is provided with the filter (see fig. 1 and 8 items angular displacement of filters with respect to substrate 38 creating lateral planes, see at least parag. 13-14).

With regard to claim 14, Yokoyama teaches a method for manufacturing an optical communication module (shown at least in fig. 1) comprising a semiconductor laser, a lens 2 to convert a beam emitted from said semiconductor laser, a wavelength selective filter 31 of the beam as converted (shown in fig. 1, item 31 and abstract), a plane of incidence and a plane of emission of which filter are substantially in parallel to each other and a light receiving device 6 to receive the beam transmitted through the filter (see fig. 1, items emission/incident beams), said method comprising the steps of disposing the filter 31 such that a tilting axis of said filter has an angle with regard to an optical axis of the beam emitted from the lens 2; pivoting said tilting axis so as to adjust an incident angle of the beam with regard to the filter; and fixing the filter at a position

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where said incident angle is adjusted (see fig. 1, items incident/emission paralleled planes entering and exiting filter 31, see parag. 93).

However, Yokoyama does not specifically teach wherein the above tilting of filter is rotation of the filter. Nevertheless, Yokoyama teaches that the filter 31 is fixed with adjusting the filter angle with respect to substrate 7 (see parag. 6). It is well known to those of ordinary skill in the art when the invention was made that the tilting/angling the filter is known to be between the incidence and emission planes since such configuration being small in size and stabilizes light wavelengths with high accuracy (see parag. 2).

With regard to claim 15, Yokoyama further teaches wherein a side-slope of a plane of incidence of the filter is inclined with regard to said tilting axis (see parag. 93).

With regard to claim 16, Yokoyama teaches a method for manufacturing an optical communication module (shown in fig. 1. see abstract) comprising a semiconductor laser, a lens 2 convert a beam emitted from said semiconductor laser, a wavelength selective filter 31 of the beam as converted (shown in fig. 1, items laser and 31), a plane of incidence and a plane of emission of which filter are substantially in parallel to each other and a light receiving device 6 to receive the beam transmitted through the filter (see fig. 1, items emission/incident beams and light receiver 6), said method comprising the steps of disposing the filter 31 by inclining the side-slope of the

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plane of incidence by an angle with regard to the optical axis of the beam; and fixing said filter at a position where said incident angle is adjusted (see parag. 93).

However, Yokoyama does not specifically teach rotating said filter around an axis different from the side-slope of said plane of incidence so as to adjust an incident angle of the beam with regard to said filter. Nevertheless, Yokoyama teaches planes of incidence and emission being paralleled (see fig. 1, items incident/emission paralleled planes entering and exiting filter 31) and that the filter 31 is fixed to substrate 7 by angularly adjusting the filter with respect to substrate (see parag. 93 and 6). It is well known to those of ordinary skill in the art when the invention was made that rotating said filter around an axis different from the side-slope of said plane of incidence so as to adjust an incident angle of the beam with regard to said filter is known to be rotating said filter around an axis different from the side-slope of said plane of incidence so as to adjust an incident angle of the beam with regard to said filter since such configuration stabilizes light wavelengths (see parag. 2).

With regard to claim 17 and 18, Yokoyama further teaches wherein at the step of adjusting the incident angle of the beam with regard to the filter, said filter is rotated around a center of the optical axis of the beam emitted from the semiconductor laser or a line parallel with regard to said optical axis (see fig. 1, item etalon 31 receiving/transmitting light around a center of optical axis and see parag. 93; also parag. 14 and 105).

Citation of Relevant Prior Art

10. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

JP02001257419A Published Yokoyama teachings on 9/21/2001

Auracher et al. 6539145

Auracher 6400739

Katagiri et al. 6157025

Wakata et al. 5130998

Goncharov et al. 6583873

These references are cited herein to show the relevance of the apparatus/methods taught within these references as prior art.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Cyrus Kianni whose telephone number is (703) 308-1216.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (703) 308-4881.

Any response to this action should be mailed to:

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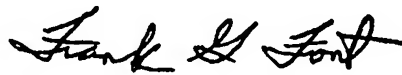
(703) 308-7722, (for formal communications intended for entry)

or:

(703) 308-7721, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.



Kevin Cyrus Kianni
Patent Examiner
Group Art Unit 2877

Frank Font
Supervisory Patent Examiner
Group Art Unit 2877

September 8, 2003